




First record of *Microspingus cinereus* (Bonaparte, 1850), Cinereous Warbling Finch (Passeriformes, Thraupidae), from the state of Rio de Janeiro, Brazil

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Abstract. We document from the state of Rio de Janeiro, Brazil, the first record of *Microspingus cinereus* (Bonaparte, 1850), which was observed in the municipality of Barra Mansa in October 2020. The species was originally documented in central Brazil, potentially linked to Cerrado habitats. However, recent observations from eBird and WikiAves databases indicate that *M. cinereus* has been spreading towards the southeast for several years. It has been considered Vulnerable for almost two decades due to the loss of grassland habitats. Our discovery expands the known geographic range of *M. cinereus* to eastern Brazil and may have importance for future biogeographic studies and the conservation of this species.

Keywords. Conservation, geographic distribution, ornithology

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Introduction

Located in the eastern Brazil, the first region to be colonized and exploited, the Atlantic Forest has accumulated a broad and relatively early knowledge of its avifauna as compared to other Brazilian biomes; the state of Rio de Janeiro one of the most studied states of Brazil with this biome (Pacheco et al. 2008). Currently, 806 bird species are known to occur in the state of Rio de Janeiro; this number represents 41% of the total bird species occurring in Brazil and approximately 79% of the total bird species in the Atlantic Forest (Bergallo et al. 2000; Moreira-Lima 2013; Pacheco et al. 2021; Gagliardi and Serpa 2022). Despite extensive knowledge of the avifauna of Rio de Janeiro state, new bird

records have recently been made from the state (Vecchi and Alves 2008; Guido et al. 2016; Alves et al. 2017; Del-fino and Carlos 2022).

Microspingus cinereus (Bonaparte, 1850), Cinereous Warbling Finch, is a Neotropical passeriform that occur sparsely in non forest habitats of central Brazil (Costa and Rodrigues 2013; Marques-Santos et al. 2014). Classified as endemic to the Cerrado biome (Silva and Bates 2002), *M. cinereus* was considered to be globally Vulnerable between 2000 and 2017 (IUCN 2022). During this time, the population was suspected to have declined due to a reduction of suitable habitat (Collar et al. 1992). However, more recent studies suggest that this species can tolerate and even benefit from degraded areas, such as abandoned pastures (Simon et al. 1999;

Ribon 2002; Vasconcelos 2007), degraded Cerrado vegetation, fields, and orchards (Lopes et al. 2010), and its global conservation status was reassessed in 2018 to Least Concern (IUCN 2022). Here, we document the first record of *M. cinereus* from the state of Rio de Janeiro, Brazil.

Methods

Our observation was made during a birdwatching near the locality known as Robertão waterfall (22°21'37.66"S, 044°06'56.77"W) in the municipality of Barra Mansa, Rio de Janeiro state, Brazil. The region of the record is dominated by pasture, with fragments of native forests of differing sizes, shapes, and conservation levels; these fragmented forests are sparsely distributed over the landscape (Fig. 1). We used a Canon PowerShot SX540 HS camera for photographing the birds, and the resulting photograph (Fig. 2) was deposited in the WikiAves citizen-science database (Filho 2020). We produced the map (Fig. 3) in QGIS v. 3.18.1 (QGIS Development Team 2021) and used the BirdLife International (2022) map for *Microspingus cinereus* geographical distribution to compose this species' previously known distribution (Jaramillo and Juana 2021).

Results

Microspingus cinereus (Bonaparte, 1850)

Figure 2

New record. BRAZIL – Rio de Janeiro • Barra Mansa; 22°21'37.66"S, 044°06'56.77"W; 491 m elev.; 18.X.2020; Manoel Tuler Filho obs.; ♂ and ♀; WA4026228.

Identification. This species is a small, grayish finch and is characterized by having pale, plumbeous upperparts juxtaposed with a slightly darker loreal area. Its wings and tail are tinged with a dusky hue, subtly accented by a gray border, while the tail features a distinctive white tip (at the extremities of its rectrices). The throat and underparts are conspicuously white, offering a stark contrast to its blackish bill and reddish iris. Immature individuals of this species exhibit a prevalent brown wash on their heads.

A similar species is *Neothraupis fasciata* (Lichtenstein, 1823), White-banded Tanager, can be distinguished by the presence of a discernible black mask, while its juveniles exhibit a notable prevalence of brown pigmentation. This finch produces a series of high-pitched and vigorously spirited warbling sounds (Jaramillo and Juana 2021).

Discussion

Knowledge of the biology and natural history of *Microspingus cinereus* is sparse (Costa and Rodrigues 2013). Several authors have claimed that *M. cinereus* is naturally rare, has low density (Ridgely and Tudor 1989; Stotz et al. 1996; Lopes et al. 2009), or occurs irregularly (Melo-Júnior 1998). This pattern of occurrence is possibly due to a semi-nomadic behavior in response to fire dynamics, which occurs naturally in the Cerrado biome (Aguiar and Camargo 2004).

Microspingus cinereus is a recent colonizer in eastern Brazil and has been observed in non-native pastures in areas formerly covered by Atlantic Forest (Simon et



Figure 1. Site where *Microspingus cinereus* was observed in Barra Mansa, Rio de Janeiro state, Brazil. Photograph: Manoel Tuler Filho.



Figure 2. *Microspingus cinereus* photographed in field on 18 October 2020 in the municipality of Barra Mansa, Rio de Janeiro state, Brazil. Photograph: Manoel Tuler Filho.

al. 1999; Vasconcelos et al. 1999; Vasconcelos and D'angelo-Neto 2007). These pastures are generally renewed by frequent burning, a common practice in Brazil (our observation), which creates a similar environment for *M. cinereus* as in the Cerrado, and thus may have contributed to the expansion of this species to eastern Brazil. However, Lopes et al. (2010) reported a specimen of *M. cinereus* collected in 1936 in the municipality of Viçosa (Minas Gerais) and deposited in the National Museum of Rio de Janeiro (uncatalogued), which suggests that the species has been present in eastern Brazil for much longer.

Records of this species in the literature are sparse, limited to a few individuals per site, and temporally isolated (Ridgely and Tudor 1989; Stotz et al. 1996; Simon et al. 1999; Vasconcelos et al. 1999; Ribon 2002; Vasconcelos 2007; Vasconcelos and D'angelo-Neto 2007; Lopes et al. 2010; Rodrigues et al. 2011; Costa and Rodrigues 2012; Wischhoff et al. 2012; Costa and Rodrigues 2013). *Microspingus cinereus* may be extirpated in Mato Grosso (no records since 1904) and in Mato Grosso do Sul (one record in 1937); it had been thought to be extirpated in São Paulo, since there were no records since 1901, but in August 2012 *M. cinereus* was recorded in the municipality of Divinolândia (Coeti 2012). This sighting shows the importance of citizen science in gaining knowledge of the geographic distribution of species, especially of rare species.

Citizen science once again has been pivotal in advancing our understanding of the geographic distribution of *M. cinereus*, with the first sighting, reported here, of this species from the state of Rio de Janeiro. However, further research is necessary to determine whether the observed pair of individuals are permanent, breeding residents or transient and nomadic. Such an investigation holds significance due to this species' seminomadic behavior, particularly in response to fire dynamics, as expounded upon by Mello-Júnior (1998).

While fire is a natural phenomenon within the Cerrado biome (Aguiar and Camargo 2004), in the Atlantic Forest, it is primarily associated with the renewal of pastures for livestock. There are many records of this species in rocky fields in the Serra do Espinhaço and surrounding mountain ranges, such as Serra do Cipó, Serra do Caraça, and Serra do Curral, among others (Vasconcelos et al. 2008). However, recent data provided in the WikiAves and eBird platforms show that there are many records along the Serra da Mantiqueira, including in Itatiaia National Park, between the states of Minas Gerais and Rio de Janeiro. Hence, it warrants consideration whether anthropogenic practices have facilitated this species' expansion into the Atlantic Forest biome and concurrently influenced its seminomadic tendencies within this specific ecological context. These inquiries require a thorough investigation to uncover their complexities and implications, particularly

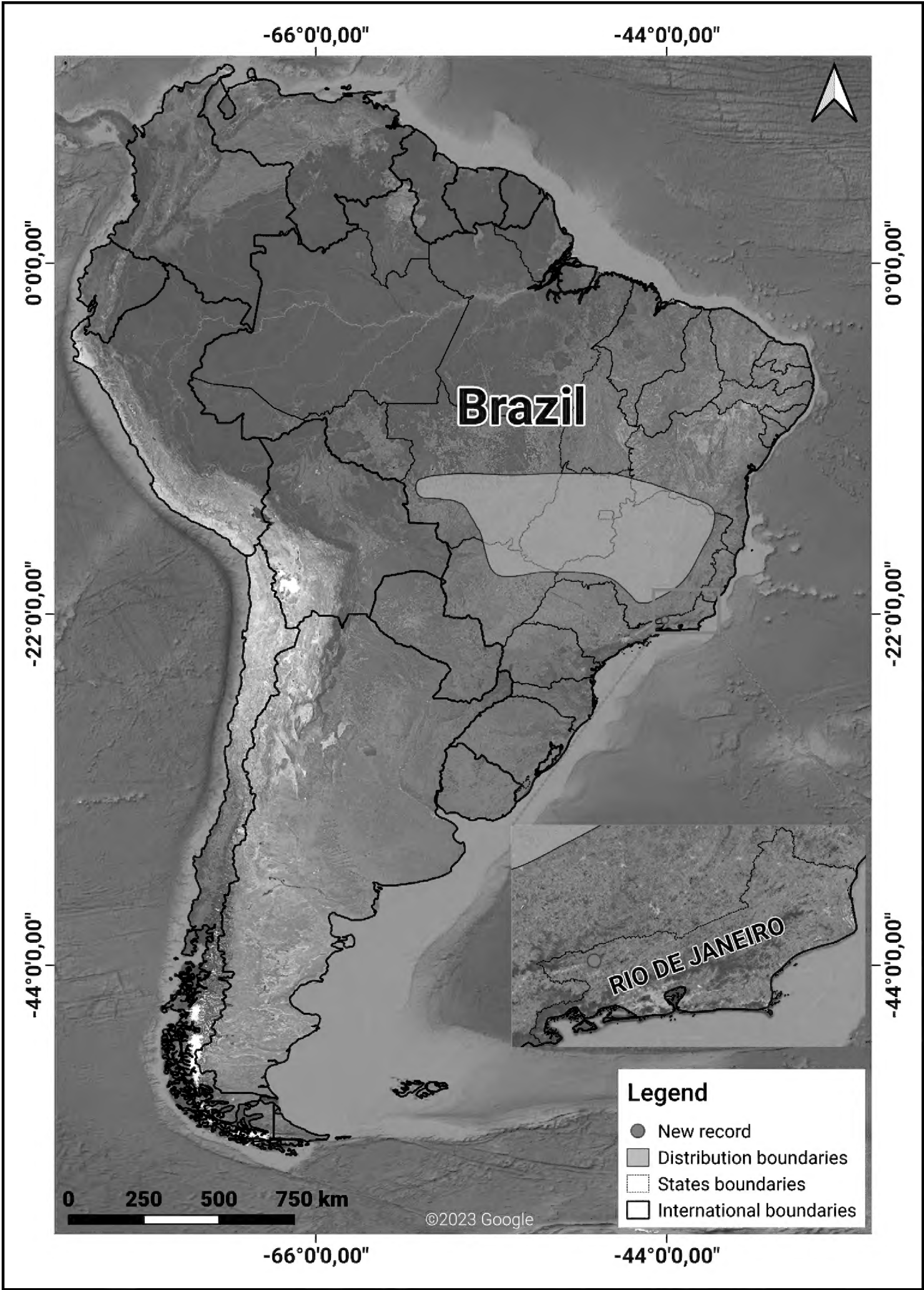


Figure 3. Geographic distribution of *Microspingus cinereus* in Brazil according to BirdLife (2022) with new record shown.

concerning the influence of human activities on the expansion or contraction of species distributions.

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Conceptualization: GMT, JRGAM. Data curation: GMT, JRGAM, CNOF. Investigation: MTF. Visualization: MTF, GMT. Formatting: CNOF. Writing – original draft: GMT. Writing – review and editing: GMT, JRGAM, CNOF

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